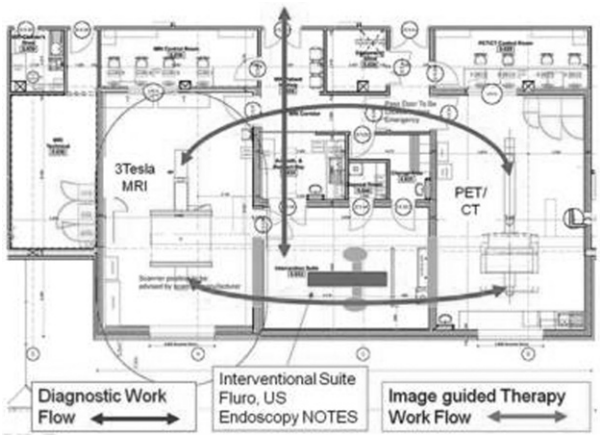
pathology. To refresh the imaging data, patient can be moved from ISS to MC suites, data acquisition takes place, and the patient is then returned to the ISS where the new MR imaging data can be used to complete the procedure.
Results: The current set up also permits utilisation of PET in conjunction with ISS procedures, e.g., as the final imaging modality to control whether PET-enhancing pathology was completely removed or angioplasty perfoemd. For instance, after completion of ablation under MR imaging, the patient can be moved into the PET/CT suite. A PET image produced after tracer injection and uptake can then be used to assess the completeness of the ablation procedure.
Conclusions: A room layout combining 3T MRI and PET/CT with other interventional modalities (e.g., fluoroscopy, ultrasound, CT) has been realized for integrated multimodality image-guided diagnosis and therapy of cardiovascular diseases. Such a design enables corollary studies into novel workflows for taking full advantage of the integrated design.



TCT-336

Patient-Specific Rehearsal Prior To Endovascular Aneurysm Repair: A Pilot Study

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Background: Patient-specific rehearsal (PsR) of an endovascular aortic aneurysm repair (EVAR) enables the interventionalist to practice the case prior to treat the real patient. This pilot study aimed to evaluate if PsR for EVAR is feasible, influences technical performance, to evaluate face validity and the subjective sense of utility.
Methods: Patients with an AAA suitable for EVAR with the Gore C3 Excluder (W.L. Gore & Assoc, Sunnyvale, California, USA) were enrolled in three centres. A 3D model of the patient's anatomy was generated using the PROcedure rehearsal software within the Angiomentor (Simbionix, Ohio, Cleveland). Less than 24 hours before the real case, rehearsals were conducted in the Laboratory or Angiosuite. Technical metrics were recorded. All team members completed a questionnaire evaluating the EVAR experience. A subjective questionnaire was used to evaluate the realism, technical and human factor aspects.
Results: Nine patients were enrolled. EVAR procedures were performed by 7 different teams. 6/8 lead interventionalists were highly experienced in EVAR (> 50 cases). In 7/8 patients, the rehearsal significantly changed the optimal position of the C-arm to maximally cover the proximal and contralateral landing zones. In 6/8 and 5/8 patients respectively, an identical oblique or cranio-caudal fluoroscopy angle was chosen in real life. All team members found the rehearsal useful for selecting the optimal fluoroscopy angle (median 4, IQR 4-5). The realism of the EVAR procedure simulation was rated highly (median 4, IQR 3-4). All team members found the PsR useful to optimally prepare the entire team (median 4, IQR 4-5). The choice of the tool kit (median 2, IQR 1.5-3) nor the diameter of the device (median 2, IQR 2-3) was likely to be altered by the rehearsal.
Conclusions: PsR for EVAR is feasible and permits creation of realistic case studies. Subjective evaluation indicates that it may influence optimal C-arm angles, be useful for preoperative case review and valuable to prepare the entire team. However, a RCT is required to evaluate how this technology may influence technical and team performance ultimately leading to improved patient outcomes and increased safety.

Diabetic Patients

Hall D

Tuesday, October 23, 2012, 8:00 AM–10:00 AM

Abstract nos: 337-355

TCT-337

Clinical Outcome of Diabetic and Non-Diabetic Patients Treated With Second-Generation Zotarolimus-Eluting and Everolimus-Eluting DES

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Background: Diabetes is associated with a higher risk of adverse events following PCI with drug eluting stents (DES). Within the TWENTE trial, a randomized trial comparing zotarolimus-eluting Resolute and everolimus-eluting Xience V stents, a significant interaction was seen between diabetes and DES type with regard to target vessel failure (TVF). In diabetics, safety and efficacy data of these DES are scarce.
Methods: In this post-hoc analysis of TWENTE, clinical outcome of both DES in diabetic (n=301; 36.2% insulin-treated) and non-diabetic patients (n=1090) was compared. Clinical endpoints were adjudicated by an independent, external events committee. Multivariate logistic regression analyses were performed to adjust for differences in baseline variables.
Results: Groups stratified by DES were similar except for a higher prevalence of hypercholesterolemia in non-diabetic patients of the Xience V arm (p=0.04) and calcified target lesions in diabetic patients of the Resolute arm (p=0.04). In both diabetics and non-diabetic patients, multivariate analysis indicated no significant difference in clinical outcome between DES. Within non-insulin-treated diabetics, there was also no significant between-stent difference in clinical outcome. However, in insulin-treated diabetics, the Resolute arm showed higher rates of target vessel failure (TVF)(28.3% vs 7.3%, p=0.015), target-lesion failure(26.4% vs. 5.5%, p=0.016), and patient oriented composite endpoint(32.1% vs. 10.9%, p=0.02). A significant interaction was observed between insulin treatment and DES type for TVF (p=0.029). In Resolute treated patients, insulin-treated diabetics had a higher rate of TVF compared to non-diabetics and non-insulin-treated diabetics (p<0.001). In the Xience V arm, rates of TVF were similar across all subgroups.
Conclusions: In non-diabetic patients and non-insulin-treated diabetics, Resolute and Xience V showed no significant difference in safety and efficacy up to 12 months. In the limited number of insulin-treated diabetics, Resolute was associated with inferior clinical outcome. This hypothesis-generating finding requires confirmation in large randomized trials.

TCT-338

Meta-analysis of Percutaneous Coronary Intervention Versus Coronary Artery Bypass Graft Surgery in Patients with Diabetes and Left Main and/or Multivessel Coronary Artery Disease

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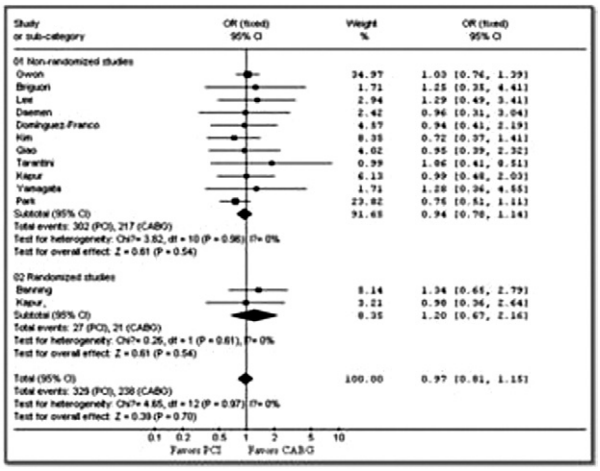
Background: The optimal coronary revascularization strategy for patients with diabetes and left main and/or multivessel disease is undetermined. The aim of our study was to evaluate percutaneous coronary intervention (PCI) versus coronary artery bypass graft (CABG) in those patients.
Methods: We identified 13 articles, published before Oct 2011, enrolling 6992 patients, follow-up period ranged from 1 to 5 years.
Results: Patients with PCI had a significant reduction in cerebral vascular attack (CVA) (OR 0.29, 95% CI 0.16 to 0.51, p<0.0001, I2 =0%) as compared with CABG, whereas there was a four-fold increased risk of repeat revascularization associated with PCI even using drug-eluting stent (OR 4.44, 95% CI 3.42 to 5.78, chi2 =4.92, p<0.00001, I2 =0%). The overall mortality (OR 0.97, 95% CI 0.81 to 1.15, p=0.70, I2 =0%) was comparable between the PCI and CABG. However, in subgroup analysis, the composite outcome (death/myocardial infarction/CVA) was significantly reduced in

favor of DES implantation (OR 0.79, 95% CI 0.63 to 0.99, chi2 =1.07, p=0.04, I2 =0%).

Figure 1. Risk of all cause mortality in diabetic patients undergoing PCI versus CABG



Conclusions: Our study confirmed the cerebral vascular benefits of PCI by significantly reducing CVA risks, and the composite outcome was better in patients undergoing PCI with drug-eluting stent despite a higher repeat revascularization rate. It poses imperative demands for future prospective randomized studies to define the optimal strategy in patients with diabetes and left main and/or multivessel disease.

TCT-339

Comparison of 12-month Clinical Outcomes in Patients with Chronic Total Occlusion (CTO) Lesion between Diabetic and Non-Diabetic: A Multicenter Study of e-CTO Investigators

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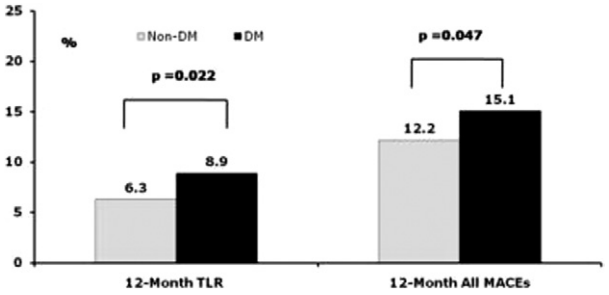
Background: The aim of this study is to compare the one year clinical outcomes in patients with chronic total occlusion (CTO) lesion between diabetic and non-diabetic.
Methods: A total 3890 patients (Age; 62.99 ± 11.04, Men; 74.1 %) with chronic total occlusion were analyzed. The patients were divided into a diabetic group (n = 2,579 patients) and a non-diabetic group (n = 1,401 patients).We evaluated the one year clinical outcomes including target lesion revascularization (TLR) and major adverse cardiac events (MACEs) between the two groups.
Results: One year after PCI, 319 All-MACEs were developed. TLR and All-MACEs was higher in diabetic group compared with that in non-diabetic group (respectively, 6.3 % vs. 8.9 %, p = 0.022 and 12.2 % vs. 15.1%, p = 0.047). In multivariate analysis, diabetic mellitus was an independent predictor for one year TLR (OR; 1.414, p=0.036) and All-MACEs (OR; 1.743, p=0.018).

Odds ratios of risk factors for 12-month TLR and All-MACEs in multivariate analysis.

	OR for 12-month TLR	p	OR ratio for 12-month All-MACEs	p
Age	0.999 (0.984-1.014)	0.887	0.993 (0.969-1.016)	0.948
Male	0.849 (0.591-1.220)	0.377	1.020 (0.564-1.843)	0.536
PCI Hx	0.916 (0.633-1.325)	0.641	0.859 (0.463-1.595)	0.631
HTN	1.012 (0.719-1.424)	0.946	0.839 (0.518-1.357)	0.474
CHF	1.836 (1.070-3.153)	0.028	1.050 (0.407-2.708)	0.920
DM	1.414 (1.023-1.953)	0.036	1.743 (1.102-2.758)	0.018



Conclusions: This study identified diabetic mellitus as an independent risk factor for one year TLR and All-MACEs in patients with CTO lesion.

TCT-340

Efficacy and Safety of Biodegradable Polymer Biolimus-Eluting Stents versus Durable Polymer Everolimus-Eluting Stents in Diabetic Patients - A Prospective Non-Randomized Single Center Long Term Comparison

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Background: Biodegradable polymer drug eluting stents improve safety and efficacy when compared to durable polymer drug eluting stents, but this may not be true in diabetic patients.
Methods: This prospective single center registry compared primary efficacy composite end point of cardiac death, myocardial infarction and clinically indicated target-lesion revascularization, primary safety end point defined as the rate of stent thrombosis and long term survival in diabetic patients (pts) receiving biodegradable polymer Biolimus-Eluting Stents (BES) or durable polymer Everolimus-Eluting Stents (EES).
Results: A total of 278 stents (133 BES and 145 EES) were implanted in 251 diabetic pts (179 males, 6% type 1 diabetes) aged 66±10 years who presented with Acute Coronary Syndrome (n=64, 25%) or stable angina (n=133, 53%). Multiple vessel disease was present in 63% pts. Vessels treated were 114 Left Anterior Descending, 76 Circumflex, 77 Right Coronary, 8 Left Main. Dual antiplatelet therapy was given for at least 12 months. Baseline clinical characteristics, cardiovascular risk factors, lesions location and classification were not statistically significantly different in the two groups receiving BES (Group 1, n=118 pts) and EES (Group 2, n=133 pts). At the end of the follow-up-period [median 19 (0-44) months], no statistically significant difference was found in the occurrence of the primary efficacy composite end point in the 2 groups (8.5% in Group 1 versus (vs) 12.3% in Group 2, p=0.65), nor in the occurrence of the primary safety end point (1.7% in Group 1 vs 1.8% in Group 2, p=0.22). There was no difference in cardiac death (2.5% in Group 1 vs 2.6% in Group 2, p=0.64), myocardial infarction (4.1% in Group 1 vs 3.6% in Group 2, p=0.42), target vessel revascularization (10% in Group 1 vs 11% in Group 2, p=0.95) and target lesion revascularization (7% in Group 1 vs 8% in Group 2, p=0.82). The overall survival (Kaplan Meyer) was not significantly different in both groups (log rank=0.53).
Conclusions: In conclusion, clinical efficacy and safety of new generation biodegradable polymer BES and durable polymer EES are similar in diabetic pts confirming that diabetes is an entity in terms of coronary artery disease.